A LIVABLE ENVIRONMENT FOR WILDLIFE IS A QUALITY ENVIRONMENT FOR MAN

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Director's Column

Wildlife and Winter

The following notes are a game director's thoughts as the snow falls, the temperature drops and the wind blows. As the snow covers more and more of Montana, the available range for wildlife shrinks smaller and smaller.

What is happening to the wildlife? For some, such as waterfowl, flight means survival. Others, like the bear, sleep under the snow, dormant till spring. For some, there is no flight south ,and no suspension of daily living. There is only the haven of Winter Range.

For elk, Winter Range may mean foothills and south facing slopes, or low ridge tops blown bare of snow. Elk eat grass and some kinds of brush with equal relish. In brushy plants, the nutrition is found in the tips of the leaders which grow new each year. For most elk, Winter Range is not far. For a few famous herds, Winter Range is at the end of miles-long migration trails: down the Sun River, down the Gallatin, across the Yellowstone.

For white-tailed deer, Winter Range may be the same as summer range, and involve only a shift from eating weedy plants to eating the brushy plants that nature has decreed deer must have in winter.

For mule deer, Winter Range may be a few miles and a few thousand feet downhill, in the foothills and brushy valleys. Plains mule deer seek coulees and creek bottoms in winter.

The moose, largest member of the deer family, winters commonly in willow basins and swampy places. The tall moose can handle snow depths that would stifle lesser creatures. Moose tend to winter in rather small areas where they have found their favorite foods most abundant.

The Rocky Mountain bighorn sheep, king of them all, winters on low south-facing slopes under the security of towering rock faces which few enemies are so fool-hardy as to attempt to brave. Bighorns, like elk, both graze and browse.

The mountain goat, sentinel of awesome places, seeks Winter Range on ridges where harsh gales keep snow depths to a minimum.

Antelope seek the shelter of hills and shallow plains valleys where sage brush is plentiful. These Winter Ranges dot the areas antelope use throughout the year.

The types of Winter Range necessary for each species vary with the food digestion requirements of the animals. Essentially, Winter Ranges for all big game have several things in common.

Winter Ranges are those places where the particular food plants necessary for each species are available all winter long. In the face of winter, there is no sentiment in the wildlife world. The strong fare best, and first. The young, the old, and the weak must fend for themselves. There are only two activities of importance on Winter Range: eating and resting prior to more eating.

The days pass. Storms come and go. Sometimes it thaws. Then it freezes again. The crust makes it tougher on Winter Range, and survival may depend on food plants which are above the snow crust. This is emergency food, desperation rations which otherwise might not be eaten at all.

Some die, for them winter is over. The struggle was too much, too long. The animal: dead. The range: exhausted. For others, this may have been the last winter. The entire coming year may be necessary to rebuild what has been lost during the long months of marginal winter range. For many, Winter Range has been adequate. The unborn life within the females will continue to grow. The vitality, fertility and fecundity for high herd production has been furnished by abundant winter range food.

Winter Range, wherever it may be, amounts to only about ten per cent of the overall area those animals may be using over a whole year. It is limited, it is confined, and winter permits no substitutes.

Where Winter Range occurs on private land, which is often, wildlife is tolerated in direct proportion to the competition it gives domestic animals for food and space. Where Winter Range occurs on public land, its usefulness depends on how much

emphasis has been placed on the winter requirements of the **wild** animals. The requirements are that the grass and brush which grows in the spring are left for wildlife in the winter.

Where local big game populations have received an adequate hunter harvest in the fall, the Winter Range will sustain wildlife regardless of weather extremes. There are some critical key places in Montana where there are big game Winter Ranges owned or controlled by the Montana Fish and Game Commission and operated primarily for use by elk in winter. Bought with sportsmen's dollars, these ranges were chosen by the animals themselves, and this preference guided their formal establishment. These ranges are very important, but their total area is less than 13 1,000 of 1 per cent of Montana's overall area.

Finally, winter breaks. All big game animals seek the new green growth of various kinds. If the winter range food has not been used up totally, the shift from dry to green foods can be revitalizing and gradual. But where exhausted Winter Ranges force an abrupt change, the animals verging on starvation and suffering malnutrition die, after having survived winter's worst.

Deer, whose diet contains very little grass overall, spend a couple of weeks grazing grass and weeds. The spring green-up lures the animals away from Winter Range . . . away to the calving grounds, away to the lambing grounds, away to the fawning areas, toward Summer Range, where life is easy.

Here new growth must come. Young plants must blossom vigorously. Old plants must be able to thrust out new leaders again. For this is the retreat beyond which there is only death. This in Winter Range, the most important part of game management.

Frank H. Dunkle

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Edited by Craig Whitney

A Look at the Fleecer Mountain Elk Winter Range

BY JOHN ORMISTON
Management Area Biologist

In January, 1910, about 100 elk were trapped in Yellowstone National Park, shipped via railway to, and released near Divide, Silver Bow County, Montana. These elk were transplanted to add to the small native herd in the Fleecer Mountain vicinity. Fleecer Mountain, elevation 9,445 feet, lies immediately northwest of Divide (Figure 1). The grassy south and east facing slopes, interspersed with timbered north slopes and brushy draws, provide ideal elk winter range. The Fleecer vicinity was a "natural" for elk, and from 100 (plus natives) in 1910, the herd grew to over 500 in 1947. The herd was reduced during the 50's, but is now almost at the 1947 level and growing.

The elk season in the Fleecer vicinity was closed for several years after the transplant. One of the first seasons of record was a three-day, either-sex hunt in 1939. Only about 40 elk were taken. In 1940, nearly 200 bulls were taken during a three-day bulls only season. As the elk herd continued to grow, more liberal seasons became the rule. A typical season in the 1940's was either-sex hunting for about a month, with late winter special permit seasons in some years. Long either-sex seasons were the rule through the mid-1950's. In the early 1960's, a short either-sex season with about a month of antlered bull hunting was typical of the season allowed. From 1963 through 1967, the month-long season was restricted to antlered bulls. In 1968 and 1969, in addition to the general season for bull elk only, the Fish and Game Commission issued 30 permits allowing the hunter to choose any elk.

The size of the elk herd has apparently been a product of the hunting season allowed. With bull only or short either-sex seasons prior to 1947, about 500 elk were seen on Fleecer in 1947. Long either-sex seasons brought about a reduction, and only about 100 elk were seen in 1950. Either-sex seasons were shortened, and the herd responded slightly in the late 1950's. Since antlered bull only hunting was again resumed in 1963, there has been a definite upward trend in population numbers.

The condition of the elk winter range has been related to the size of the elk herd and cattle grazing practices. Severe overuse of elk wintering areas as a result of livestock grazing in the summer and fall and elk concentrations in winter was reported as early as 1946. Critical elk winter range along the east ridge of Charcoal Gulch was reportedly overused by cattle in the summer and fall, before elk use began. The combination created a significant range problem, since the food habits of cattle and elk are similar. That is, in areas of high concentrations for both ruminants, they compete for available forage to the detriment of range.

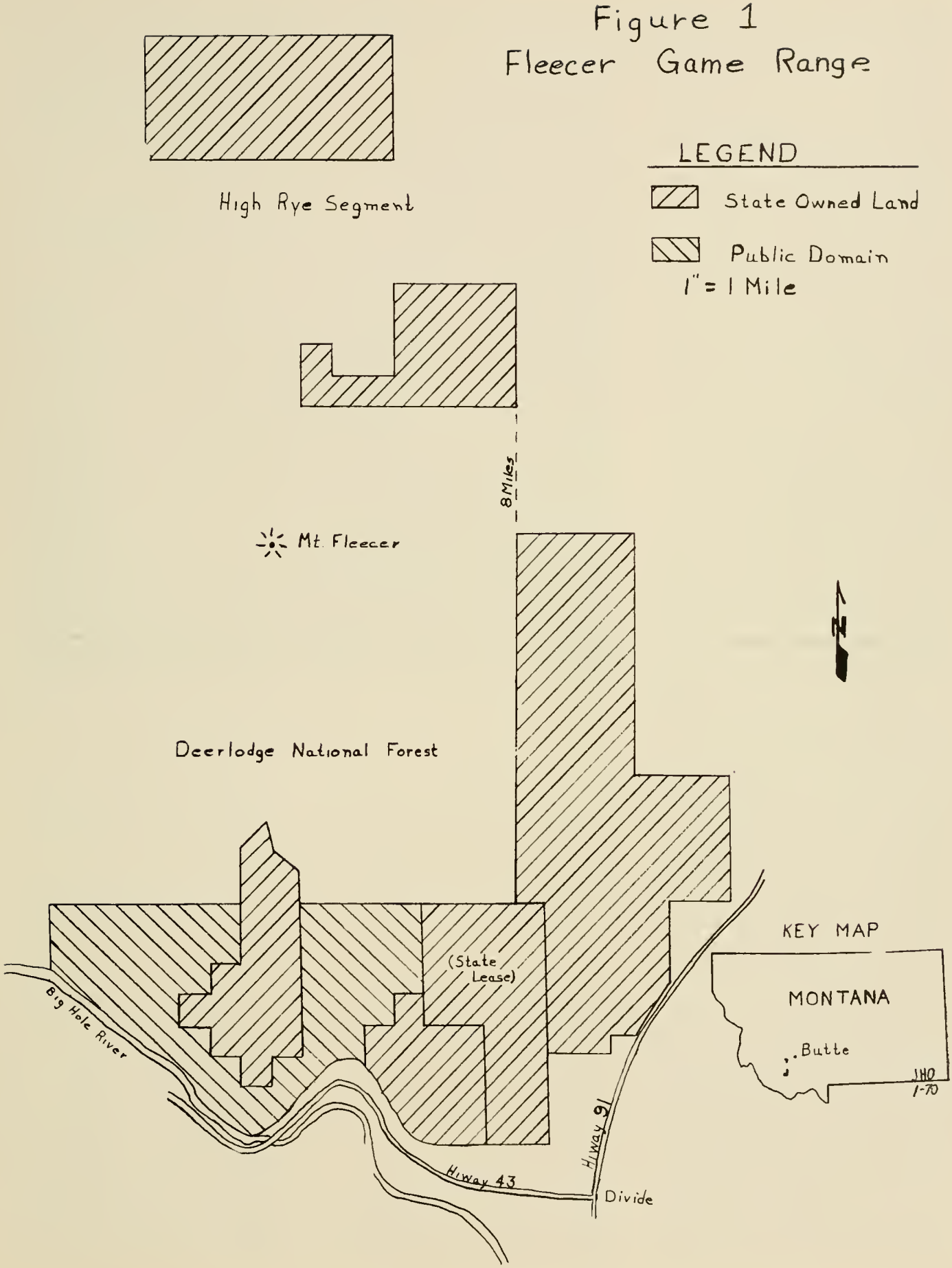
The Fleecer cattle allotment includes about 5,000 acres of National Forest land between Divide Creek and Charcoal Gulch. Nearly all of the primary cow range (about 4,000 acres are suitable for grazing) is also primary elk winter range. During 1943, through 1951, about 440 cows with calves were permitted on the Fleecer allotment from June 1 through September 30, a total of 1,760 animal months.* Deteriorating range conditions prompted a reduction of the grazing season and cow numbers to 1,448 animal months in 1952. In 1959, permitted cattle use was reduced to 1,102 animal months and the grazing season was from June 16 through September 30. The total reduction in cattle use (both in numbers permitted and season of use) from 1943 to 1952, was 37%, but the range problem still persisted.

In 1959, the U. S. Forest Service completed a set of exclosures designed to establish the relative use of the area by elk and cattle. There was a one-half acre total exclosure (no use permitted), a 10 acre elk jump-over (no cattle use allowed), and a one acre exclosure with removable panels to allow cattle in but keep elk out. By 1962, it was quite apparent that overuse by cattle had the greatest influence on the deteriorating range conditions.

After years of controversy about the relationship between cattle and elk in the Fleecer area, the Fish and Game Commission decided to take positive action to reserve elk winter range and insure the perpetuation of the Fleecer elk herd by purchasing private lands in the area and "retiring" cattle permits from the Fleecer allotment. In April, 1962, the state acquired about 3,000 acres from Forrest and Mary Lindlief, and the Fleecer Mountain Game Range was

* An "animal month" is defined as one cow with calf grazing for one month.

Figure 1
Fleecer Game Range



born. About 1,000 acres were purchased from Will Brazier in August, 1962, and further miscellaneous transactions, including withdrawal by the Bureau of Land Management of about 1,800 acres of public domain for wildlife purposes only, brought a total of almost 7,000 acres set aside for wildlife, primarily elk, under jurisdiction of the Fish and Game Commission.

In January, 1969, the Commission was able to purchase a 2,000 acre ranch in the Norton Creek drainage about 10 miles north of Fleecer Mountain Game Range. The ranch is now known as Fleecer Mountain Game Range-High Rye Segment. The High Rye Segment is traditional elk winter range, but has been overgrazed by cattle in the past. The area shows tremendous potential for wintering elk. The preference permit on the National Forest for 83 cows with calves for four months, (332 animal months), was also "retired", thus relieving the Norton Creek allotment of part of its cattle grazing pressure. The acquisition of the ranch has put most of the elk winter range around Fleecer Mountain under the control of public agencies and has assured the perpetuation of a sizable elk herd nation.

An almost total removel of cattle from the Fleecer allotment also occurred. The preference permit for 283 cows with calves for three and one-half months, (990 animal months), "owned" by the Lindliefs was retired. Since 1962, only 69 cows with calves have grazed the allotment, for an annual total of only 241 animal months, a decrease in use of 75%. Range response was rapid, and in 1964, probably for the first time since elk were transplanted, there was an ample supply of elk forage. Excellent range conditions now prevail on the Fleecer area, and the elk herd continues to increase.

In order for the sportsmen of Montana to have an efficient management program for the elk herd wintering on Fleecer, the Fish and Game Commission must have good information on where the elk are in the fall so intelligent management decisions can be made. Information to date indicates some "Fleecer" elk have traveled across the Big Hole River to Vipond Park, about 16 miles west to Deep Creek, and some have been seen year 'round in the Fleecer vicinity. The picture is still clouded, but it is obvious that Fleecer elk can be far-ranging. Much more information is needed before a complete management program can be fully effected.

The present elk management program in the Fleecer area is designed to allow for continued increase of the herd. In 1968 and 1969, 30 either-sex permits were issued for hunting District 319 so we could begin to gather information on hunter success in the area. Almost 850 people applied for the available permits each year. Over 50% of the permit holders were successful during the 1968 season. There were 11 cows or calves and four bulls shot by the 28 permit holders who actually hunted. In 1969, 29 hunters shot eight cows or calves and no bulls for 28% success.

In the future, the management plan must be designed to accommodate the needs of the elk and their range. Such a plan may include permits, general bull seasons, or perhaps even very limited seasons, but a primary consideration will be elk. As the elk herd approaches the carrying capacity of the winter range, we must harvest enough elk to keep the herd stable. Since elk, in too large concentrations can and do cause range damage, we do not want to become "over stocked". That is, we must keep the elk herd wintering on Fleecer near the carrying capacity of the range. A too large elk herd overgrazes and thus deteriorates its range, and calf production and survival goes down. The winter range should be kept in excellent condition so sportsmen can harvest a maximum number of elk on a sustained basis. An elk herd in good condition, as the Fleecer herd is now, is capable of producing 60 to 65 calves per 100 cows. This is the potential we would like to realize.

The future of the Fleecer Mountain Game Range and the elk herd winterin gthere looks bright. At present, there is more winter forage available than the elk can use, but the herd is increasing. A good reproductive condition is indicated by a cow:calf ratio of 65:100 in January, 1969, and aerial surveys show a definite upward trend in elk numbers since 1963, when the Fleecer Mountain Game Range was purchased. Only through intelligent management of the elk and range resource can we realize the tremendous potential that is ours. This is our goal at Fleecer Mountain.

Faye Couey Retires

Faye Couey, District 1 game manager (Kalispell), retired from the Fish and Game Department as of December 31, 1969. Mr. Couey was honored for his long and distinguished career with a retirement party on January 24, hosted by department employees.

Mr. H. G. 'Bud' King, chairman of the Montana Fish and Game Commission, noted that Couey is the only biologist at present to devote his entire career to wildlife management in Montana. Mr. King cited Couey for his part in building the outstanding game management program in Montana.

Mr. Couey began work with the department in 1941 after obtaining his Masters Degree in wildlife biology from the University of Wisconsin. For the following six years he was assigned to field research and surveys which included the Gallatin elk herds and Sun River bighorn sheep.

In 1946, Mr. Couey was promoted to assistant coordinator for the Pittman-Robinson Program in big game management. His duties further involved extensive land aquisition work. Couey played an integral part in the department's aquisition of the Gallatin, Sun River and other game range lands vital to present day management programs.

In 1957, Mr. Couey assumed the duties of district game manager in Kalispell which he held until his retirement.

Succeeding Couey as game manager is Dick Weckwerth, former management biologist, also of Kalispell. Mr. Weckwerth began his career in 1955 as a student assistant with the Fish and Game Department's old fur division. After the completion of his graduate studies in 1957, he was permanently assigned to Kalispell as management biologist.

Dick Weckwerth

Students and Wildlife Habitat at Ninepipe

BY GERALD SALINAS

Photo by G. Salinas

Project Coordinator Harold Knapp with student at Ninepipe.

For the past three years, Missoula high schools have conducted a conservation and wildlife outdoor laboratory project at Ninepipe Game Management Area in Lake County. Students taking part in the program have been from Hellgate, Sentinel, Loyola and Sacred Heart high schools. Teachers from the schools worked with the students in the field. Montana Fish and Game Department personnel have assisted.

The major activity has been a program of habitat manipuation. Students have been directy invoved in such activities as mapping, ditching, planting of shrubs and trees and small crop areas and pheasant census. The shrub plantings now total more than twenty acres in twelve locations.

This program of habitat manipulation is designed with a twofold purpose in mind; to involve students in various outdoor activities and to give them a basic understanding of the involvements necessary to provide the public with one of our most valuable natural resources—wildlife. Too often outdoor activities have been oriented to the idea that the students go into the field and listen while trained personnel explain what has or is being done. This "show and tell" method does have its merits, but it does not allow the student to become actively involved in the actual work.

The strongest point in our program of habitat manipulation is the realization by the students that they are serving a definite and permanent purpose. They will be able to see the results of their work and perhaps enjoy the benefits of their efforts in future years. By actual habitat manipulation, the students are putting into practice the ideas and knowledge they are gaining from the program.

Pheasants are the main wildlife species in our project. Although the habitat manipulation is primarily aimed toward pheasants, waterfowl and song birds are also given special consideration. The idea is not to farm pheasants, but to provide a natural environment for wildlife and to allow for natural interdependence of all organisms within the study area.

The program has consisted of seven basic activities:

1. **Censusing pheasants**
2. **Surveying and contour mapping**
3. **Vegetative mapping**
4. **Planning habitat manipulation**
5. **Site selection for development**
6. **Site preparation and planting**
7. **Maintaing the habitat**

A description of one of these activities follows:

1. Censusing is carried out each year in specific locations after the first big snow storm of the winter. The census is very important as it is the basis for determining the success of the entire program in terms of numbers of pheasants maintained within the area.

A great deal of current wildlife conservation policy is based on density estimates as for example carrying capacity and sex ratio data. It is important that students obtain an understanding of these concepts. Carried out each year, such a census will indicate the success of the habitat development program.

In order to provide an efficient method for observing pheasants, students are spaced one hundred feet apart in a straight line. The line should stay parallel to the field while moving slowly through the pheasant cover. By using this method, it is possible to census two square miles in a morning with three groups of twenty students each.

Depending on the time of day, pheasants may be found in almost any vegetation. When not feeding, the birds are found mostly in dense cover, such as cattails. The number of pheasants observed and flushed are tallied. An index of the number of acres per pheasant is obtained in this manner.

Large scale maps of the area are prepared and the different types of veegetative cover are plotted. With the use of maps and regular field checks, the best arrangement of crops and protective cover types are planned. The spacing of the trees, shrubs, legumes and other crops in relation to one another is vitally important. The arrangement most beneficial to wildlife is chosen.

The fields are then prepared and the planting accomplished. As the vegetation develops, the area becomes more of a wildlife haven each year.

Students planted approximately 5,000 shrubs and trees at Ninepipe this year as part of their habitat development and manipulation project.

Photo by G. Salinas

Students surveyed the ditches to be used in the habitat development study. Physics, Chemistry, Forestry and Earth Science classes work cooperatively on this project.

Photo by G. Salinas

Students discover that some shrubs and trees are superior to others in offering food and cover for wildlife species.

Photo by G. Salinas

Photo by G. Salinas

Students planting shrubs at Ninepipe.

Norman Guyaz—New Recreation Planner

The Montana Fish and Game Department announced the appointment of Norman Guyaz, 31, as Recreation Planner with the Recreation and Parks Division. He assumed his new duties on December 15 in Helena.

Mr. Guyaz's scholarstic background includes a Bachelor of Science degree in forestry and a Masters in business administration from the University of Maine. In addition, he served four years with the U.S.A.F. before completing his education in 1966.

Mr. Guyaz formerly taught earth sciences at the Farmington High School in Maine and was a cartographic editor with the National Survey Company before moving to Helena.

Photo by Gerry Atwell

Weasel in brown summer dress.

It has been stated that ounce for ounce the weasel is the most ornery, bloodthirsty of mammals. There are more than thirty species of weasels in the world, but only three live in the United States. All three are also represented in Montana. These are the longtailed, or common weasel, the smaller short-tailed weasel, and the even smaller least weasel.

During the warmer months weasels are a brownish color, but during the winter they turn white, except for the tips of their tails. The white winter coats are called ermine, traditional symbols of nobility and worn by kings, nobles and judges. The black tails once symbolized the highest rank in society. More than 50,000 skins have gone into robes for a British coronation.

Weasel in white winter color.

Photo by Gerry Atwell

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